



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

PIEDMONT REGIONAL OFFICE

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Director

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STATE AIR POLLUTION CONTROL BOARD ENFORCEMENT ACTION - ORDER BY CONSENT ISSUED TO

AdvanSix Resins and Chemicals, LLC.

Registration No. 50232

SECTION A: Purpose

This is a Consent Order issued under the authority of Va. Code §§ 10.1-1309 and -1316, between the State Air Pollution Control Board and AdvanSix Resins and Chemicals, LLC. regarding the AdvanSix Resins and Chemicals, LLC., Hopewell Site for the purpose of resolving certain violations of the Virginia Air Pollution Control Law and the applicable permit and regulations.

SECTION B: Definitions

Unless the context clearly indicates otherwise, the following words and terms have the meaning assigned to them below:

1. "Board" means the State Air Pollution Control Board, a permanent citizens' board of the Commonwealth of Virginia, as described in Va. Code §§ 10.1-1184 and -1301.
2. "CFR" means the Code of Federal Regulations, as incorporated into the Regulations.
3. "AdvanSix" means AdvanSix Resins and Chemicals, LLC., a limited liability corporation authorized to do business in Virginia and its members, affiliates, partners, and subsidiaries. AdvanSix is a "person" within the meaning of Va. Code § 10.1-1300.
4. "Decree" means the July 18, 2013, Consent Decree issued to AdvanSix by the Environmental Protection Agency (EPA) and the DEQ.
5. "Department" or "DEQ" means the Department of Environmental Quality, an agency of the Commonwealth of Virginia, as described in Va. Code § 10.1-1183.

6. "Director" means the Director of the Department of Environmental Quality, as described in Va. Code § 10.1-1185.
7. "Facility" means AdvanSix Resins and Chemicals, LLC.'s Hopewell Plant, a chemical manufacturing plant located at 905 East Randolph Road, Hopewell, Virginia. The Facility primarily produces caprolactam.
8. "Notice of Violation" or "NOV" means a type of Notice of Alleged Violation under Va. Code § 10.1-1309.
9. "Order" means this document, also known as a "Consent Order" or "Order by Consent," a type of Special Order under the Virginia Air Pollution Control Law.
10. "PCE" means a partial compliance evaluation by DEQ staff.
11. "PRO" means the Piedmont Regional Office of DEQ, located in Glen Allen, Virginia.
12. "Permit" means the Title V Operating permit to operate a chemical production plant, which was last amended under the Virginia Air Pollution Control Law and the Regulations to AdvanSix on March 30, 2016.
13. "Regulations" or "Regulations for the Control and Abatement of Air Pollution" mean 9 VAC 5 chapters 10 through 80.
14. "Va. Code" means the Code of Virginia (1950), as amended.
15. "VAC" means the Virginia Administrative Code.
16. "Virginia Air Pollution Control Law" means Chapter 13 (§ 10.1-1300 *et seq.*) of Title 10.1 of the Va. Code.
17. "Warning Letter" or "WL" means a type of Notice of Alleged Violation under Va. Code § 10.1-1309.

SECTION C: Findings of Fact and Conclusions of Law

1. AdvanSix owns and operates the Facility. While caprolactam is the principal product made at the Facility, other products include ammonium sulfate, cyclohexanol, cyclohexanone and oxime chemicals.
2. The Facility is the subject of the Permit, which allows the operation of the Facility.

DC-25 Failed Stack Test

3. On September 7, 2017, DEQ staff received written notification from AdvanSix that the stack test performed on Scrubber DC-25 for particulate matter (PM), particulate matter 10 microns (PM10) and particulate matter 2.5 microns (PM2.5) on August 10, 2017 included emissions that exceeded its permitted limit. In the letter, they stated that an internal investigation revealed two causes of the higher emissions. First, they were using reclaimed water that was high in dissolved ammonium sulfate for the scrubber solution. These sulfates were exiting the scrubber stack as particulate matter. Second, during a maintenance procedure, the drive pulleys for the fan had been reversed, creating a much higher fan speed than normal. The letter also stated that both these problems had been corrected and that a retest was scheduled for September 19, 2017.
4. On October 10, 2017, DEQ staff received a copy of multiple stack test reports performed between August 8-11, and September 19-20, 2017. Two of these reports were for testing performed on the outlet for Scrubber DC-25 for the measurement of PM, PM10 and PM2.5. DEQ staff performed a PCE of the report and noted the following factual observations:
 - a. During the August 10, 2017 testing event, emissions were measured as:
 - i. PM at 0.85 lbs/hr
 - ii. PM10 at 0.83 lbs/hr
 - iii. PM2.5 at 0.52 lbs/hr
 - b. During the September 19, 2017 testing event, emissions were measured as:
 - i. PM at 0.08 lbs/hr
 - ii. PM10 at 0.08 lbs/hr
 - iii. PM2.5 at 0.05 lbs/hr
5. Permit condition VII.C.225 limits these emissions to the following levels:
 - a. PM to 0.35 lbs/hr.
 - b. PM10 to 0.35 lbs/hr.
 - c. PM2.5 to 0.1 lbs/hr.
6. On December 7, 2017, DEQ issued Notice of Violation No. APRO000757-001 to AdvanSix for the violations noted in paragraphs C.3. through C.4. Based on the September 7, 2017 letter submitted and September 19, 2017 stack test results showing compliance with PM, PM10 and PM2.5 emission limits, no additional corrective actions are necessary.

VT-462 and VT-515 VOC Emissions Exceedances

7. The Permit allows the operation of two 1,000,000 gallon phenol storage tanks, further identified as emission unit numbers VT-462 and VT-515, which are used to accept deliveries of phenol from barges and to store it for use on-site. These tanks are heated to keep the phenol fluid. The basis for the phenol emissions from the tanks is a model that assumes an annual average temperature of 140 degrees Fahrenheit.
8. On January 29 and May 15, 2018, DEQ staff received deviation reports detailing the corrected annual emissions of 5.46, 5.16 and 4.95 tons VOC from tank VT-462 for

calendar years 2015, 2016 and 2017, respectively. Additionally, the highest 12-month continuous sum of VOC emissions from the tank was 8.58 tons. The May 15, 2018 report also included corrected annual emissions of 4.51 tons VOC from tank VT-515 for calendar year 2017. On February 26, September 14 and December 17, 2018, DEQ staff performed PCEs of the reports and included these observations.

9. Permit condition III.C.42 limits the VOC emissions from each tank, VT-462 and VT-515, to 4.2 tons per year.
10. On April 26, 2018, DEQ issued Notice of Violation No. APRO000888-001 to AdvanSix for the violations noted in paragraphs C.7. through C.8.
11. On May 15, 2018, DEQ staff met with representatives of AdvanSix to discuss the violations noted above and any corrective actions they have implemented or planned to implement. During that meeting AdvanSix confirmed that they had performed the following:
 - a. Directed maintenance staff to lower the temperature below 140 degrees F,
 - b. Revised procedures, training and data collection system (DCS) set points to monitor and maintain the phenol tank temperatures below 140 degrees F.Based on this information, which was memorialized in a letter from AdvanSix, dated May 14, 2017, no additional corrective actions are necessary.

Continuous Emission Monitor Deviations

12. The Facility operates multiple process lines that are required to have Continuous Emission Monitors (CEMS) that are used for both compliance documentation and to properly operate the Selective Catalytic Reduction units (SCR) used to control nitrogen oxide (NOx) emissions. These SCRs require the correct injection rate of ammonia to reduce NOx emissions below the permitted level for each line.
13. On February 14, 2018, DEQ staff received a Title V prompt deviation report detailing an malfunction event with the SICK (brand name) analyzer for Area 9 B-Train TW-9 on January 31, 2018. On that day, AdvanSix technicians placed the instrument into maintenance mode to perform diagnostics at about 9:47am. During the performance of diagnostics for the analyzer, the ammonia feed rate to the B-Train SCR was maintained at a constant rate, regardless of the amount of NOx emissions. A back-up analyzer, identified as the Rosemount (brand name), continued to monitor NOx emissions while the SICK analyzer was not operational. The Rosemont analyzer data indicated NOx destruction efficiency was less than the permit requirement from about noon until 2pm that day, however no excess emissions were noted. DEQ staff performed a PCE of the report and noted the following factual observation: On January 31, 2018 there were two hours during which the NOx emission control efficiency for TW-9 ranged between 92 to 94 percent.
14. Permit condition IV.A.74 requires a minimum NOx removal efficiency of 95 percent from the TW-9 flue gas stream.

15. On March 29, 2018, DEQ staff received a Title V prompt deviation report detailing a malfunction event for Area 9 B-Train TW-8 on March 28 through 29, 2018. On March 29, while responding to CEMs alarms, AdvanSix technicians noted that the outlet NOx CEMs was locked at a constant value. There are two NOx CEMs for the SCR; one for the inlet and one for the outlet. The outlet CEMs controls the ammonia injection rate and thus the NOx emissions. As the unit was reading one constant value and not providing real-time data, the ammonia feed-rate to the SCR was insufficient to control the NOx emissions below the permitted limit. Technicians determined that the cause of this was a failed fiber optic cable port on the communication switch for the unit, which prevented communication between the CEMs and the SCR. The event lasted from 4:55pm on March 28th, to approximately 8:00am on March 29th, and resulted in 1) an estimated 316.6 pounds of NOx released in excess of the permitted limit and 2) a reduced NOx control efficiency ranging from 84 to 94 percent. AdvanSix considers this event a malfunction and, as these CEMs were installed pursuant to the Decree, claims the Affirmative Defense for Malfunctions provided for in the Decree.
16. Permit condition IV.A.74 requires a minimum NOx removal efficiency of 95% from the TW-8 flue gas stream. Permit condition IV.C.97 limits the short-term NOx emissions from the TW-8 flue gas stream to 51 pounds per hour.
17. On November 13, 2018 DEQ staff met with representatives of AdvanSix to discuss the violations noted above and any corrective actions they have implemented or planned to implement. During that meeting AdvanSix confirmed that they had performed the following:
 - a. Changed the CEMS calibration signal from a wireless to a hardwired input.
 - b. Modified the SCR ammonia feed control logic to alarm if the CEMS is determined to be in calibration mode for an extended period of time, and
 - c. Trained all CEMS operators on the incidents and the changes made to prevent future similar occurrences.Based on this information, no additional corrective actions are necessary.
18. Va. Code §10.1-1322 states that failure to meet conditions of a permit is considered a violation of the Virginia Air Pollution Control Law.
19. 9VAC5-80-260 and 9VAC5-80-1210(I) require compliance with all terms and conditions of Title V operating permits and permits for stationary sources respectively.
20. Based on the results of the above mentioned PCEs, meetings and submitted documentation, the Board concludes that AdvanSix has violated conditions III.C.42, IV.A.74, IV.C.97 and VII.C.225 of the Permit, Va. Code § 10.1-1322 and 9VAC5-80-260 and -1210 of the Virginia Air Pollution Control Law and Regulations as described above.

SECTION D: Agreement and Order

Accordingly, by virtue of the authority granted it in Va. Code §§ 10.1-1309 and -1316, the Board orders AdvanSix, and AdvanSix agrees, to pay a civil charge of \$202,221.00 within 30 days of the effective date of the Order in settlement of the violations cited in this Order.

Payment shall be made by check, certified check, money order or cashier's check payable to the "Treasurer of Virginia," and delivered to:

Receipts Control
Department of Environmental Quality
Post Office Box 1104
Richmond, Virginia 23218

AdvanSix shall include its Federal Employer Identification Number (FEIN) with the civil charge payment and shall indicate that the payment is being made in accordance with the requirements of this Order for deposit into the Virginia Environmental Emergency Response Fund (VEERF). If the Department has to refer collection of moneys due under this Order to the Department of Law, AdvanSix shall be liable for attorneys' fees of 30% of the amount outstanding.

SECTION E: Administrative Provisions

1. The Board may modify, rewrite, or amend this Order with the consent of AdvanSix for good cause shown by AdvanSix, or on its own motion pursuant to the Administrative Process Act, Va. Code § 2.2-4000 *et seq.*, after notice and opportunity to be heard.
2. This Order addresses and resolves only those violations specifically identified in Section C of this Order. This Order shall not preclude the Board or the Director from taking any action authorized by law, including but not limited to: (1) taking any action authorized by law regarding any additional, subsequent, or subsequently discovered violations; (2) seeking subsequent remediation of the facility; or (3) taking subsequent action to enforce the Order.
3. For purposes of this Order and subsequent actions with respect to this Order only, AdvanSix admits to the jurisdictional allegations, and agrees not to contest, but does not admit, the findings of fact, and conclusions of law in this Order.
4. AdvanSix consents to venue in the Circuit Court of the City of Richmond for any civil action taken to enforce the terms of this Order.
5. AdvanSix declares it has received fair and due process under the Administrative Process Act and the Virginia Air Pollution Control Law and it waives the right to any hearing or other administrative proceeding authorized or required by law or regulation, and to any judicial review of any issue of fact or law contained herein. Nothing herein shall be construed as a waiver of the right to any administrative proceeding for, or to judicial

review of, any action taken by the Board to modify, rewrite, amend, or enforce this Order.

6. Failure by AdvanSix to comply with any of the terms of this Order shall constitute a violation of an order of the Board. Nothing herein shall waive the initiation of appropriate enforcement actions or the issuance of additional orders as appropriate by the Board or the Director as a result of such violations. Nothing herein shall affect appropriate enforcement actions by any other federal, state, or local regulatory authority. AdvanSix does not waive any rights or objections it may have in any enforcement action by other federal, state, or local authorities arising out of the same or similar facts to those recited in this Order.
7. If any provision of this Order is found to be unenforceable for any reason, the remainder of the Order shall remain in full force and effect.
8. AdvanSix shall be responsible for failure to comply with any of the terms and conditions of this Order unless compliance is made impossible by earthquake, flood, other acts of God, war, strike, or such other unforeseeable circumstances beyond its control and not due to a lack of good faith or diligence on its part. AdvanSix shall demonstrate that such circumstances were beyond its control and not due to a lack of good faith or diligence on its part. AdvanSix shall notify the DEQ Regional Director verbally within 24 hours and in writing within three business days when circumstances are anticipated to occur, are occurring, or have occurred that may delay compliance or cause noncompliance with any requirement of the Order. Such notice shall set forth:
 - a. the reasons for the delay or noncompliance;
 - b. the projected duration of any such delay or noncompliance;
 - c. the measures taken and to be taken to prevent or minimize such delay or noncompliance; and
 - d. the timetable by which such measures will be implemented and the date full compliance will be achieved.

Failure to so notify the Regional Director verbally within 24 hours and in writing within three business days, of learning of any condition above, which the parties intend to assert will result in the impossibility of compliance, shall constitute a waiver of any claim to inability to comply with a requirement of this Order.

9. This Order is binding on the parties hereto and any successors in interest, designees and assigns, jointly and severally.
10. This Order shall become effective upon execution by both the Director or his designee and AdvanSix. Nevertheless, AdvanSix agrees to be bound by any compliance date which precedes the effective date of this Order.

11. This Order shall continue in effect until:

- a. The Director or his designee terminates the Order after AdvanSix has completed all of the requirements of the Order;
- b. AdvanSix petitions the Director or his designee to terminate the Order after it has completed all of the requirements of the Order and the Director or his designee approves the termination of the Order; or
- c. the Director or Board terminates the Order in his or its sole discretion upon 30 days' written notice to AdvanSix.

Termination of this Order, or any obligation imposed in this Order, shall not operate to relieve AdvanSix from its obligation to comply with any statute, regulation, permit condition, other order, certificate, certification, standard, or requirement otherwise applicable.

12. Any plans, reports, schedules or specifications attached hereto or submitted by AdvanSix and approved by the Department pursuant to this Order are incorporated into this Order. Any non-compliance with such approved documents shall be considered a violation of this Order.
13. The undersigned representative of AdvanSix certifies that he or she is a responsible official or officer authorized to enter into the terms and conditions of this Order and to execute and legally bind AdvanSix to this document. Any documents to be submitted pursuant to this Order shall also be submitted by a responsible official of AdvanSix.
14. This Order constitutes the entire agreement and understanding of the parties concerning settlement of the violations identified in Section C of this Order, and there are no representations, warranties, covenants, terms or conditions agreed upon between the parties other than those expressed in this Order.

15. By its signature below, AdvanSix voluntarily agrees to the issuance of this Order.

And it is so ORDERED this 21st day of MARCH, 2019.


James J. Golden, Regional Director
Department of Environmental Quality

AdvanSix Resins and Chemicals, LLC. voluntarily agrees to the issuance of this Order.

Date: 3/13/19 By: Fred Harry, Jr., Plant Manager
(Person) (Title)
AdvanSix Resins and Chemicals, LLC.

Commonwealth of Virginia

City/County of Hopewell, VA

The foregoing document was signed and acknowledged before me this 13th day of March, 2019, by Frederick Harry, Jr., who is Plant manager of AdvanSix Resins and Chemicals, LLC., on behalf of the corporation.

Patricia Branch
Notary Public

7746253
Registration No.

My commission expires: Feb 28, 2021

Notary seal:

